



Test Yourself Chapter 4 Basic algebraic skills Name: _____

All Multiple Choice

- 1 The next three terms of the number sequence 28, 16, 4, ... are: **A**

A -8, -20, -32
B -8, -16, -24
C 1, 0.25, 0.0625
D 2, 1, 0.5

- 2 The missing term in the number sequence 16, 24, 36, ____, 81, 121.5 is: **B**

A 48
B 54
C 55.7
D 76.5

- 3 The first three terms generated by the number pattern $T_n = 1 + 2^n$ are: **D**

A 1, 2, 3
B 3, 4, 5
C 2, 4, 8
D 3, 5, 9

- 4 The rule for the sequence generated by the table below is: **B**

n	T_n
1	11
2	12
3	13
4	14
5	15
6	16

A $T_n = 1n$
B $T_n = n + 10$
C $T_n = n - 10$
D $T_n = 10n$

- 5 The formula used by the algebra machine to complete this table is: **D**

n	T_n
2	1
4	5
5	7
8	13
10	17
16	29

A $T_n = 2n + 3$
B $T_n = 3n - 2$
C $T_n = 3n + 2$
D $T_n = 2n - 3$

- 6 The expression $8g - 4 + 10g + 12$ simplifies to: **A**

A $18g + 8$
B $2g + 16$
C $18g - 8$
D $18g + 16$

- 7 The expression $5a^3 + a^3$ simplifies to: **B**

A $4a^3$
B $6a^3$
C $6a^6$
D $4a^6$

- 8 The expression $3c^2 - 4d - 4c^2 + 3d - 6$ simplifies to: **B**

A $c^2 - d - 6$
B $-c^2 - d - 6$
C $-c^2 + d - 6$
D $-c^2 - d + 6$

- 9** The value of $7x(y + 4)$ when $x = 3$ and $y = -2$ is: **C**
 A 21
 B -21
 C 42
 D -42
- 10** The value of $\frac{15}{g}(h - 6i)$ when $g = 5, h = 10$ and $i = -3$ is: **D**
 A 24
 B 30
 C 48
 D 84
- 11** Given that $A = P(1 + r)^n$, the value of A when $P = 2000, r = 0.1$ and $n = 5$ is: **B**
 A 2001.61
 B 3221.02
 C 11 000
 D 5.15×10^{16}
- 12** The expression $6xy \times -4z \times 3$ simplifies to:
 A $6xyz$
 B $5xyz$
 C $-6xyz$
 D $-72xyz$
- 13** The fraction $\frac{15x}{55xy}$ simplifies to: **B**
 A $\frac{3x}{11y}$
 B $\frac{3}{11y}$
 C $\frac{3}{y}$
 D $\frac{1}{y}$
- 14** The expanded form of $3x(2x - 4y)$ is: **A**
 A $6x^2 - 12xy$
 B $6x^2 + 12xy$
 C $5x^2 - 7xy$
 D $5x^2 - xy$
- 15** The solution to the equation $4(x - 3) = 8$ is: **A**
 A 5
 B 4
 C 3
 D 1
- 16** The solution to the equation $\frac{b + 5}{3} - 10 = 4$ is: **C**
 A 14
 B 20
 C 37
 D 42
- 17** The solution to the equation $3(y + 2) = -2(y - 1)$ is: **D**
 A -4
 B $\frac{4}{5}$
 C $\frac{5}{4}$
 D $-\frac{4}{5}$
- 18** Consider the solution of the equation **B**
 $6x - 8 = 40 - 2x.$
 $8x - 8 = 40 \dots \dots \dots$ Step 1
 $8x = 32 \dots \dots \dots$ Step 2
 $x = 4 \dots \dots \dots$ Step 3
 Julie checks the solution $x = 4$ and finds that her solution is incorrect.
 Which of the following statements is correct?
 A The mistake is in Step 1.
 B The mistake is in Step 2.
 C The mistake is in Step 3.
 D There is more than one mistake.

- 19** The cost (C) of renting a car is found using the formula $C = 50 + 0.2k$, where k is the number of kilometres that the car is driven. If Shirley pays \$82 for the renting of a car, the number of kilometres that the car was driven is:
- A 64
B 66.4
C 128
D 160

D

- 20** The area of a rhombus is found using the formula $A = \frac{1}{2} \times D \times d$, where D is the length of the long diagonal and d is the length of the short diagonal. A rhombus has an area of 144 cm^2 and the long diagonal is twice the length of the short diagonal. The length of the short diagonal is:
- A 6 cm
B 12 cm
C 18 cm
D 24 cm

B